

DCPTECHNICAL REVIEW DOCUMENT
For
RENEWAL OF OPERATING PERMIT 02OPWE252

DCP Midstream, LP
Platteville Gas Processing Plant
Source ID 1230595

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I. Purpose

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed Operating Permit for the Platteville Gas Processing Plant. The previous Operating Permit for this facility was issued on June 1, 2007 and expired on June 1, 2012. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted on May 26, 2011, previous inspection reports, and various email correspondence with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

The Platteville Gas Processing Plant is a natural gas processing plant designed to extract natural gas liquids from field-produced natural gas and recompress the processed gas prior to transmission to the sales pipeline. Field gas is first charged to a separator where liquids, such as water and condensate formed during transport to the plant, are separated from the gas stream. The liquids are stored in two pressurized condensate tanks until transported from the plant by truck. Any vapors from the

pressurized condensate storage tanks are routed through the vapor recovery unit to the inlet.

The gas stream discharged from the separator is compressed to approximately 900 psig and sent to the processing skid. The gas stream fed to the processing skid is chilled by a propane refrigeration system to separate the natural gas liquids (NGL) from the gas stream. The NGL liquids are heated in a stabilizer vessel to remove the lighter hydrocarbons. The hydrocarbon vapors and the vapors from the inlet separator are compressed and sent to the NGL separator or to either the inlet or discharge gas lines. Moisture contained in the gas stream is absorbed by ethylene glycol. The moisture-laden glycol is regenerated in a reboiler. The absorbed water volatilizes and is discharged to the atmosphere. The glycol solution is recirculated to remove additional moisture from the gas stream. Natural gas liquids are stored in three pressurized tanks, pending removal from the plant by pipeline. The compressed gas is transported off-site via truck or pipeline. During a plant turn-around or in case of emergency, the facility can be blown down to the flare.

The process uses six (6) compressors powered by 1680 HP natural gas fired reciprocating internal combustion (IC) engines. Two (2) 1400 HP natural gas fired IC engines are used for compressing propane for the refrigerant for the processing skid. One (1) 1478 HP natural gas fired IC engine is used for compression of stabilizer overheads.

The plant is located near Platteville in Weld County, Colorado. This facility is located in an Area classified as attainment for all pollutants except ozone. It is classified as non-attainment for ozone and is part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.1.

There is no affected state within 50 miles of the plant. Rocky Mountain National Park and the Rawah Wilderness Area are Federal Class I designated areas within 100 kilometers of the plant.

This facility is categorized as a NANSR major stationary source (Potential to Emit of VOC and NO_x > 100 Tons/Year). Future modifications at this facility resulting in a significant net emissions increase (see Reg 3, Part D, Sections II.A.26 and 42) for VOC or NO_x or a modification which is major by itself (i.e. a Potential to Emit of > 100 TPY of either VOC or NO_x) may result in the application of the NANSR review requirements.

This facility is categorized as a PSD major stationary source (Potential to Emit \geq 250 Tons/Year for NO_x and CO). Future modifications at this facility resulting in a significant net emissions increase (see Reg 3, Part D, Sections II.A.26 and 42) or a modification which is major by itself (Potential to Emit of \geq 250 TPY) for any pollutant listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.

Emissions (in tons/yr) at the facility are as follows:

	POTENTIAL TO EMIT (TONS PER YEAR)			
	NOx	VOC	CO	HAPs
Five (5) 1680 HP Waukesha Engines	154.0	81.0	154.0	2.4
One (1) 1478 HP Waukesha Engine	27.1	14.3	27.1	0.8
Two (2) 1400 HP Waukesha Engines	51.4	27.0	51.4	0.4
One (1) 1680 HP Waukesha Engine	28.8	14.4	28.8	0.5
Dehydrator		4.6		1.1
Fugitive Emissions		27.6		0.7
15 MMBtu Hot Oil Heater(s)	6.4	0.2	5.4	
Flare	0.1	0.2	0.5	
Totals	267.8	152.8	267.2	5.8
FACILITY 2010/11 ACTUAL EMISSIONS, TPY	234.6	127.8	234.1	Unavailable

	REPORTABLE HAP EMISSIONS (LB PER YEAR)					
	HCHO	Acetaldehyde	Benzene	Acrolein	n-Hexane	Total (tpy)
Five (5) 1680 HP Waukesha Engines	2770	785	445	740		2.4
One (1) 1478 HP Waukesha Engine	497	141	80	133		0.4
Two (2) 1400 HP Waukesha Engines	902	256	145	241		0.8
One (1) 1680 HP Waukesha Engine	554	157	89	148		0.5
Dehydrator			2266			1.1
Fugitive Emissions			218.6		1101.7	0.7
Totals (tpy)	2.4	0.7	1.6	0.6	0.6	5.9
FACILITY 2010/11 REPORTABLE ACTUAL EMISSIONS, TPY	1.89	0.54	1.15	0.5		4.07

Please note that uncontrolled HAP emissions at this facility are below major source levels and therefore this facility is considered a true minor source for HAPs.

Applicable Requirements

NESHAP Subpart ZZZZ

Subpart ZZZZ, also known as the RICE MACT, applies to both new and existing engines of all sizes located at area sources of HAPs. Under the rule, engines located at area sources are considered existing if construction commenced prior to June 12, 2006. All engines except C-180 commenced construction prior to June 12, 2006 and are considered existing. The engines do not qualify as remote engines as defined in §63.6675. These existing engines are subject to emission standards for formaldehyde and must comply by October 19, 2013. Engine C-180 is considered a new engine. As specified in §63.6590(c), new or reconstructed RICE located at area sources must meet the requirements of Subpart ZZZZ by meeting the requirements in 40 CFR Part 60 Subpart JJJJ and no further requirements apply under 40 CFR Part 63 Subpart ZZZZ.

NSPS Subpart JJJJ

Applicability of 40 CFR Part 60 Subpart JJJJ for spark-ignition engines is based on the construction date, date of manufacture, and power rating. For the purposes of determining applicability to the provisions of Subpart JJJJ, the date that construction commences is the date the engine is ordered. The rule specifies that for engines greater than 500 hp, requirements apply to units both ordered after June 12, 2006 and manufactured after July 1, 2007, which subjects engine C-180 to the emissions standards in NSPS Subpart JJJJ.

NSPS Subpart OOOO

The final rule for 40 CFR Part 60 Subpart OOOO was published in the Federal Register August 16, 2012. These requirements apply to affected facilities that commenced construction, modification, or reconstruction after August 23, 2011. Facilities potentially affected by the Subpart OOOO requirements at natural gas gathering stations are: reciprocating compressors; continuous bleed natural-gas driven pneumatic controllers with a natural gas bleed rate greater than 6 standard cubic feet per hour (scfh); and storage vessels.

There are no reciprocating compressors at Platteville which commenced construction after August 23, 2011. If, in accordance with the engine replacement AOS, a compressor package is swapped concurrently with an engine replacement, the facility will be subject to the requirements of Subpart OOOO and must submit an operating permit modification application accordingly.

The Platteville facility does not operate any pneumatic controllers with a natural gas bleed rate greater than 6 scfh. Additionally, none of the storage tanks onsite commenced construction after August 23, 2011. Therefore, at this time, the source is not subject to any of the provision of Subpart OOOO.

Regulation No. 7

All engines at this facility are subject to the non-attainment area requirements of Section XVI to install control devices. All engines at this facility are also subject to the state-wide requirements of Colorado Regulation No. 7, Section XVII.E. Reg 7, Section XVII.B.4 exempts units that are subject to MACT or NSPS emission control requirements from the provisions of Section XVII.E. Engine C-180 is subject to emissions standards under the spark-ignition internal combustion engine NSPS, Subpart JJJJ. The remaining engines will be subject to NESHAP Subpart ZZZZ control requirements effective October 19, 2013. Therefore all engines will be exempt from the requirements of Section XVII.E when the Subpart ZZZZ requirements take effect. Until the engines comply with the Subpart ZZZZ, they will be required to install control equipment under the provision of Section XVII.E as well as Section XVI. The temporary Section XVII.E requirement has been streamlined from the permit and subsumed in the requirements of Section XVI.

Greenhouse Gases

The potential greenhouse gas emissions at this facility are less than 100,000 TPY CO₂e. Future modifications at this facility that exceed 100,000 TPY CO₂e may be subject to regulation.

Source Determination

With this permit action, the Division revisited the source determination in regards to natural gas operations in the area surrounding the Platteville facility to verify that the proper pollutant emitting activities are included in this permit as part of the Platteville Gas Processing Plant facility. DCP did not identify any other pollutant emitting activities in the Platteville vicinity that are dependent upon the Platteville gas plant to maintain operation. The Division considers the current determination for the facility to be accurate.

III. Discussion of Modifications Made

Source Requested Modifications

The renewal application received on May 26, 2011 requested the following modifications:

- Update engine serial numbers in accordance with AOS executions since last permit issuance.
- Add engine C-180, permitted under Colorado Construction Permit 07WE0993, to the operating permit.
- Replace the language in Condition 5.1 with “The flash gas emissions shall be vented back into the process at all times, resulting in zero emissions from the flash tank.”
- Increase the emission limitation for fugitive VOC emissions from equipment leaks.
- Add CAM plan. A plan was included in the renewal application which requested daily monitoring of catalyst inlet temperature.

The source’s requested modifications were addressed as follows:

Page following cover page

- Updated the responsible official and permit contact information in accordance with information submitted in the renewal application.

Section I – General Activities and Summary

- Updated the description of permitted activities in Condition 1.1 to include the additional compressor engine.
- Updated list of underlying construction permits in Condition 1.3 to include 07WE0993 for the new engine.

- Updated Condition 3.1 (status of source with respect to NANSR and PSD requirements) to reflect the PSD status with the additional engine and the current non-attainment status of the area in which the plant is located.
- Added the new engine to the summary table of emission units in Condition 7.

Section II.1 – Engines

- Initial approval of construction permit 07WE0993 was issued on April 14, 2008. According to the Division's database, self-certification for this permit was received on February 13, 2009. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section III.G.2 for initial approval construction permit 07WE0993 but has not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part C, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate applicable requirements from the initial approval construction permit have been incorporated into the operating permit as follows:

- *Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes. EPA Method 9 shall be used to measure opacity. (Condition 1)*

The 30% opacity requirement has been included in the operating permit only for startup of this unit. Based on engineering judgment, the Division considers this the only specific activity under which the 30% opacity condition applies.

- *The permit number shall be marked on the subject equipment for ease of identification. (State only enforceable) (Condition 2)*

This is a construction permit only requirement which has already been fulfilled and therefore was not included in the permit.

- *Emissions of air pollutants shall not exceed the following limitations (as calculated in the Division's preliminary analysis):*
 - NO_x 28.8 tons/yr and 4893 lb/month
 - VOC 14.4 tons/yr and 2447 lb/month
 - CO 28.8 tons/yr and 4893 lb/month

Monthly limits are based on a 31-day month. During the first twelve (12) months of operation, compliance with both the monthly and yearly emission limitations shall be required. After the first twelve (12) months of operation, compliance with only the yearly limitation shall be required. Compliance with the annual limits shall be determined on a rolling (12) month total. By the end of each month a new twelve month total is calculated based on the previous

twelve months' data. The permit holder shall calculate monthly emissions and keep a compliance record on site, or at a local field office with site responsibility for Division review. (Condition 3)

The annual emission limitations were added to the operating permit under Section II, Condition 1.1. The short term emission limits were not included as this source has been in operation longer than a year.

- *This source shall be limited to a maximum consumption rate as listed below and all other activities, operational rates and numbers of equipment as stated in the application. Monthly and annual records of the actual consumption rate shall be maintained by the applicant and made available to the Division for inspection upon request.*

- *Natural gas 101.1 MMscf/yr and 8.6 MMscf/month*

During the first twelve (12) months of operation, compliance with both the monthly and yearly consumption limitations shall be required. After the first twelve (12) months of operation, compliance with only the yearly limitation shall be required. Compliance with the yearly consumption limits shall be determined on a rolling twelve (12) month total. By the end of each month a new twelve-month total is calculated based on the previous twelve months' data. The permit holder shall calculate monthly consumption of natural gas and keep a compliance record on site or at a local field office with site responsibility, for Division review. (Condition 4)

The natural gas consumption limit was added to the operating permit in Section II, Condition 1.2. The short term limit was not included as this source has been in operation longer than a year.

- *This engine is subject to the statewide requirements for control of emissions from new and relocated natural gas fired reciprocating internal combustion engines under Regulation No. 7, Section XVII.E. Specifically, the following standards apply to engines greater than 500 horsepower (State only enforceable): (Condition 5)*

- *NO_x 2.0 g/hp-hr*
 - *VOC 1.0 g/hp-hr*
 - *CO 4.0 g/hp-hr*

This engine is subject to NSPS JJJJ emission control requirements and is therefore exempt from the requirements of Reg 7 Section XVII.E, pursuant to Reg 7 Section XVII.B.4, as discussed above.

- *A source compliance test shall be conducted to measure the emission rate(s) for the pollutants listed below, using EPA approved methods. Oxygen shall also be measured using approved methods during the source compliance test. The test protocol must be in accordance with the requirements of the Air Pollution Control Division Compliance Test Manual and shall be submitted to*

the Division for review and approval at least thirty (30) days prior to testing. Engine operating parameters will be included in the analysis with emissions reported in parts per million dry volume and grams per actual horsepower-hour (g/BHP-Hr.) or pounds per million BTU (lb/MMBtu). No test shall be conducted without prior approval from the Division. Any stack test conducted to show compliance with a monthly or annual emission limitation shall have the results projected up to the monthly or annual averaging time by multiplying the test results by the allowable number of operating hours for that averaging time. (Condition 6)

- Oxides of Nitrogen
- Carbon Monoxide
- Volatile Organic Compounds

Initial compliance testing for this engine was conducted February 4, 2009; therefore this condition was not included in the operating permit.

- *This engine shall be equipped with a(n) NSCR capable of reducing uncontrolled emissions as follows:*
 - NO_x At least 86.2%
 - CO At least 77.0%
 - VOC At least 50.0%
 - Formaldehyde At least 50.0%

Operating parameters of the control equipment are identified in the operation and maintenance plan as specified in Attachment B. The identified operating parameters will replace the control efficiency requirement on the final permit. (Condition 7)

Reg 7 requires the engine to be controlled with an NSCR and this requirement was included in the permit. The appropriate provisions from the operating and maintenance plan in Attachment B of the construction permit have been included in the operating permit.

- *Within one hundred and eighty days (180) after commencement of operation, the applicant shall adopt and follow the operating and maintenance plan and record keeping format as specified in Attachment B, in order to demonstrate compliance on an ongoing basis with the requirements of this permit. (Condition 8)*

The appropriate provisions from the operating and maintenance plan in Attachment B of the construction permit have been included in the operating permit.

- *Prevention of Significant Deterioration (PSD) requirements shall apply to this source at any such time that this source becomes major solely by virtue of a relaxation in any permit condition. Any relaxation that increases the potential to emit above the applicable PSD threshold will require a full PSD review of*

the source as though construction had not yet commenced on the source. The source shall not exceed the PSD threshold until a PSD permit is granted. (Condition 9)

This condition was not included in the operating permit, since no actual requirements apply, unless certain modifications to the permit conditions for this facility are made. This specification was included in Section I, Condition 3 with the PSD status information.

- *This source shall be subject to the requirements of Regulation Number 7, Section XVI (Control of emissions from stationary and portable engines in the 8-hour ozone control area).*

Any existing natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower, which existing engine was operating in the 8-hour Ozone Control Area prior to June 1, 2004, shall employ air pollution control technology on and after May 1, 2005, as provided in Condition 9.a & 9.b (Colorado Regulation No. 7, Section XVI.A.2). (Condition 10)

- *For rich burn reciprocating internal combustion engines, a non-selective catalyst reduction and an air fuel controller shall be required. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume. (Colorado Regulation No. 7, Section XVI.B.1). (Condition 10.a)*
- *The emission control equipment required by this Condition 9.a shall be appropriately sized for the engine and shall be operated and maintained according to manufacturer specifications. (Colorado Regulation No. 7, Section XVI.B.3). (Condition 10.b)*

The requirement to install air pollution control technology was included in the operating permit.

- *APEN reporting requirements (Condition 11)*

The APEN reporting requirements were not identified in the permit as a specific condition but are included in Section IV (General Conditions) of the permit under Condition 22.e.

- *The serial number of the subject equipment shall be provided to the Division within one hundred and eighty days (180) after commencement of operation. (Condition 12)*

The serial number for the engine was submitted and has been included in the permit in the summary of emission units in Section I, Condition 7.

- *Within one hundred and eighty days (180) after commencement of operation, compliance with the conditions contained on this permit shall be demonstrated to the Division. It is the permittee's responsibility to self-certify*

compliance with the conditions. Failure to demonstrate compliance within 180 days may result in revocation of the permit. (Condition 13).

Self-certification was submitted for this permit on February 13, 2009; therefore this condition was not included in the operating permit.

- *This permit shall expire if the owner or operator of the source for which this permit was issued: (i) does not commence construction/modification or operation of this source within 18 months after either, the date of issuance of this initial approval permit or the date on which such construction or activity was scheduled to commence as set forth in the permit application associated with this permit; (ii) discontinues construction for a period of eighteen months or more; (iii) does not complete construction within a reasonable time of the estimated completion date(See General Condition No. 6., Item 1.). The Division may grant extensions of the deadline per Regulation No. 3, Part B, III.F.4.b. (Condition 14)*

Construction of the engine has already been completed. This condition was not included in the operating permit.

- The new C-180 engine is also subject to NSPS Subpart JJJJ for new spark ignition engines, as discussed above. The applicable requirements from Subpart JJJJ were added to the permit.
- Added CAM requirements in Section II, Condition 1.11. The CAM plan submitted with the renewal application requested an inlet catalyst temperature range of 650°F to 1350°F. The operating and maintenance plan for the most recently permitted engine, C-180, has a range of 750°F to 1250°F. The remaining engines onsite must operate within this 750°F to 1250°F range as required by NESHAP Subpart ZZZZ. To remain consistent with other engine requirements the acceptable range for CAM was set from 750°F to 1250°F.

Section II.3 – Dehydrator

- Condition 5.1 included requirements for annual extended gas analysis, and annual emission limitations and calculations. The suggested replacement language was added to the existing requirements in that condition.

Section II.4 – Fugitive Emissions

- The emissions limitation was increased in accordance with the information submitted with the renewal application.
- The list of emission factors was updated to include factors for components in light liquid service.
- The component count from the most recent hard count (10/7/2009), including a 20% buffer, was included in the operating permit.

Section III – Permit Shield

- The permit application included one specific non-applicable requirement, Regulation 7, Section XVI. The requirements of this section are applicable to the source therefore this was not included in the permit shield.

Appendices

- Added CAM plan to Appendix G.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal. These changes are as follows:

Section I – General Activities and Summary

- Revised the language in Condition 1.4 include current conditions that are state-only enforceable.
- Updated the AOS for engine replacement with the most current version (10/12/2012). The new compressor engine was also added to Table 1 of Condition 4.

Section II – Specific Permit Terms

- Language changes were made throughout the permit to make it more consistent with recently issued DCP permits.
- The original permit identified the heater as applicable to the PM standard for fuel burning equipment with less than 1 MMBtu/hr fuel input. The limitation was replaced with the appropriate Reg 6 requirement.
- The NSPS General Provisions are applicable to the heater and were added to the permit accordingly.
- Increased the frequency of emission calculations for the dehydrator in Condition 3.1. The Division considers monthly frequency on a 12 month rolling total basis standard for dehydrators. Quarterly extended gas analysis is also standard for dehydrators but based on a history of compliance, the extended gas analysis frequency was left at an annual frequency.
- Removed Insignificant Activities point and requirements in Condition 7. This condition required calculating NO_x and CO emission from all insignificant activities to assure facility-wide emissions did not exceed major stationary source levels. Since the addition of engine C-180, the potential facilities emissions are greater than major source levels and monitoring of emissions from insignificant activities is no longer necessary.
- Removed Condition 9 on reporting, as information regarding report submittal is included on the page following the cover page.

- The calculations in Condition 12 were removed and included under the specific emission unit. The conversion equations for stack flow data and portable monitoring calculations were removed from the permit. This information can be found on the portable monitoring info on the Division's website.

Section III – Permit Shield

- Updated the Reg 3 Citation for the permit shield.
- Several specific non-applicable requirements are no longer non-applicable to the facility. These requirements were removed from the permit shield.

Section IV – General Permit Conditions

- Updated the general permit conditions to the current version (5/22/2012).

Appendices

- Added fire retardant clothing and safety glasses with side shields as required safety equipment in Appendix A.
- Added new engine C-180 to the reporting tables in Appendices B and C.
- Changed the Division's contact in Appendix D.
- Added NSPS KKK Example Reporting Format to Appendix H.
- Added Engine AOS Applicability reports in Appendix I.